Algebra 2 Trig Name _____

Ch 5 Review 5.1, 5.2, 5.3, 5.5 Period _____ Date _____

SHOW ALL WORK BY HAND FOR FULL CREDIT

Simplify:

1. $-2gh(g^3h^5)$
2. $\dfrac{-6a^4bc^8}{36a^7b^2c}$
3. $\left(\dfrac{5a^7}{2ab^5c}\right)^{-4}$
4. $\left(7x^3y^{-5}\right)\left(4xy^3\right)^2$
5. $\dfrac{12x^{-3}y^{-2}z^{-8}}{30x^{-6}y^{-4}z^{-1}}$
6. $\left(\dfrac{v^3}{w^{-2}v}\right)^0$
7. $\left(-2f^2-3f-5\right)-\left(-2f^2-3f+8\right)$
8. $\left(2x-3\right)\left(3x-5\right)$
9. $\left(6w-8\right)^3$
10. $\left(x+y\right)\left(x^2-3xy+2y^2\right)$

Divide the following:

11. $(18a^3+6a^2+18a)\div 6a^2$
12. $(4k^4+2k^3-3k)\div 4k^2$

Divide the following using long division and synthetic division once each.

13. $(4n^4-2n^3-26n^2-8n+2)\div(4n+2)$
14. $(y^5-5y^4+3y^2-15y-7)\div(y-5)$

15. Use the *f(x)* to answer the following questions:
    $f(x) = 3x^2+16x+48+x^3$

a) Write the polynomial in descending order of the variable.
b) State the degree and leading coefficient.
c) Find *f(-4)*.
d) Use your TI84 to graph the polynomial.
e) Sketch the graph.
f) Describe the end behavior.
g) Find a zero and divide the zero off the polynomial (SHOW WORK!)
h) Solve the remaining polynomial using a quadratic method (SHOW WORK!).

Factor completely:

16. $9x^4 - x^2$
17. $8d^6 + 27d^3$
18. $6ay+4by-2cy+3az+2bz-cz$

Solve the following equations. SHOW ALL WORK!

19. $x^4 - 29x^2 + 100 = 0$
20. $m^3 - 125 = 0$